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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,700	10/24/2003	Charles W. Propst JR.	APV31437A	6803

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EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1731

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/691,700

Applicant(s)

PROPST ET AL.

Examiner

Dennis Cordray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 48-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/30/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's amendments, filed 10/30/2006, have overcome the rejection(s) of claim(s) Claims 26-27, 30-31 and 41-47 under 35 U.S.C. 112, 35 U.S.C. 102(b) and 35 U.S.C. 103(a). Therefore, the rejections have been withdrawn. However, upon further consideration, new grounds of rejection are made as detailed below.

Examiner's Note

It is noted by the Examiner that the new claims recite a composition directly opposed to the content of the previously submitted Declaration of one of the inventors, Charles Propst Jr., received on 5/24/2006. In particular, the Declaration states "when the acrylic acid containing composition exceeds 10 dry lbs./ton, costs escalate rapidly." The Declaration also states, "In order to allow for less acrylic acid containing composition percentages, the present inventors have surprisingly and unexpectedly discovered that the addition of alkyl ketene dimer (AKD) and/or alkyl succinic anhydride (ASA) allows for less inclusion of the acrylic acid containing composition, while reducing costs and simultaneously obtaining the same advantages of greater amounts of acrylic acid containing compositions." Newly added Claim 48 recites an amount of acrylic acid containing material of 10-40 lbs/ton of the stock, which appears to be contrary to the inventive discovery stated in the Declaration.

Information Disclosure Statement

The information disclosure statement filed 12/20/2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it fails to meet the requirements for content specified in 37 CFR 1.98(a). The document cites references from a Search Report completed October 25, 2006 in a corresponding foreign application. A copy of the European Search Report for European Application No. 03777866 is attached, and the corresponding Patent documents have been received, but there is no corresponding PTO Form 1449 as stated in the first paragraph of the submission. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 59 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

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regards as the invention. Claim 59 recites the limitation "acrylic containing material" in 48. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 48, 50-54, 56-57 and 59-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Westman et al (WO 02/25013 A1) in view of Carlson (2726230).

Claim 48, 50, 54, 57, 60, 62 and 64: Westman et al discloses a papermaking composition and a method of making paper, board or paperboard wherein the composition added to the furnish in a headbox comprises cellulosic fibers, a polymer and an anionic organic microparticle (Abs; p 1, lines 2-6; p 3, lines 16-30, p 8, lines 19-22). The polymer component is preferably a cationic starch (p 4, lines 14-16). In some embodiments, the anionic organic microparticles are crosslinked copolymers containing (meth)acrylic acid (p 6, lines 29-31). The fibers can be wood fibers (p 8, lines 27-31). The anionic organic microparticles are added in the amount of 0.1 to 10 kg/tonne (0.2 to 20 lb/ton) of dry pulp and optional fillers (stock), which significantly overlays the claimed range (p 7, lines 4-8). Sizing agents can be added to the composition to further improve the Scott Bond values (p 7, lines 24-26). Suitable sizing agents are alkyl ketene dimers (AKD) and alkenyl succinic anhydrides (ASA). The AKD sizing agent is added in the amount of 0.2 to 4 kg/tonne (0.4 to 8 lb/ton) of dry fiber and optional fillers (stock), which significantly overlays the claimed range (p 7, lines 32-36).

Westman et al does not disclose the addition of a crosslinking agent to the composition although Westman et al discloses that the anionic acrylic acid containing microparticles are crosslinked.

Carlson discloses polyvalent metallic oxides well known to be crosslinking agents for acrylic containing polymers (col 1, lines 63-72 and col 2, lines 1-22). Specific examples given are oxides of zinc, calcium, magnesium, tin, titanium, and aluminum (col 6, lines 67-75).

The art of Westman et al, Carlson and the instant invention are analogous as pertaining to compositions containing polymers comprising acrylic acid or acrylic acid derivatives. It would have been obvious to one of ordinary skill in the art at the time of the invention to add a polyvalent metal oxide crosslinking agent to the composition of Westman et al in view of Carlson as a known crosslinking agent to effect intramolecular and/or intermolecular crosslinking of the acrylic acid composition.

Claims 51-52: Westman et al discloses that the wood fibers can be groundwood pulp, hardwood, softwood (virgin fibers) or from recycled fibers and deinked pulp (p 8, lines 26-32).

Claim 53: Westman et al discloses that, in a preferred embodiment, a second cationic polymer, a low molecular weight polymer (considered by the Examiner to be a polymerizable cationic composition), is added to the composition (p 5, lines 3-19).

Claim 56: Westman et al discloses that, when using the AKD and ASA sizing agents, the pH should be controlled within the range of 4-9, preferably 5-9 (p 8, lines 1-

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2). Since the anionic acrylic acid copolymer contains acidic moieties, it would have been obvious to one of ordinary skill in the art to use a well known weak base such as ammonium hydroxide to control the pH of the composition.

Claim 59: Westman et al discloses that the polymer component can be a cationic acrylate or acrylamine-based polymer (p 3, line 32 to p 4, line 2). The microparticles need not comprise acrylic acid but can have other anionic groups, or they can be inorganic particles (p 5, line 24 to p 6, line 34). Thus, in some embodiments the acrylic containing material is the cationic component.

Claim 61: Westman et al does not disclose making Kraft, linerboard and medium. It would have been obvious to one of ordinary skill in the art to make Kraft, linerboard and corrugating medium as well known paperboard materials.

Claim 63: Westman et al discloses that the papermaking suspension (furnish) containing the stock is an aqueous composition that is drained and dewatered to form a paper (p 1, lines 2-17). Thus, the furnish comprises the disclosed composition in an excess of water.

Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Westman et al in view of Carlson, as applied to claims 48, 50-54, 56-57, 59-60, 62-64 above, and further in view of Lindgren et al (5603997).

Westman et al in and Carlson do not disclose AKD and ASA used together.

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Lindgren et al discloses packaging material, board or paperboard comprising cellulose reactive sizing agents AKD, ASA or a combination of the two to make the packaging material particularly repellent to aggressive liquids (Abs; col 8, lines 56-63).

The art of Westman et al, Carlson, Lindgren et al and the instant invention is analogous as pertaining to the use of AKD and ASA as sizing agents. It would have been obvious to one of ordinary skill in the art to use both AKD and ASA in the papermaking composition of Westman et al in view of Carlson and further in view of Lindgren et al as a functionally equivalent option.

Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Westman et al in view of Carlson, as applied to claims 48, 50-54, 56-57, 59-60, 62-64 above, and further in view of Dumas (4522686).

Westman et al in and Carlson do not disclose specific alkyl ketene dimers.

Dumas discloses aqueous sizing compositions comprising a ketene dimer as a hydrophobic cellulose reactive sizing agent (Abstract). Specific examples given of the dimer include octyl, decyl, dodecyl, tetradecyl, hexadecyl, octadecyl, eicosyl, docosyl, tetracosyl, phenyl, benzyl, beta-naphthyl and cyclohexyl ketene dimers, ketene dimers prepared by known methods from montanic acid, naphthenic acid, $\Delta^{9,10}$ -decylenic acid, $\Delta^{9,10}$ -dodecylenic acid, palmitoleic acid, oleic acid, ricinoleic acid, linoleic acid, and eleostearic acid, as well as ketene dimers prepared from naturally occurring mixtures of fatty acids (col 4, lines 32-47).

The art of Westman et al, Carlson, Dumas and the instant invention are analogous as pertaining to compositions containing polymers comprising acrylic acid or acrylic acid derivatives and their use as sizing compositions. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the claimed alkyl ketene dimers in the composition of Westman et al in view of Carlson and further in view of Dumas as well known and functionally equivalent options.

Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Westman et al in view of Carlson, as applied to claims 48, 50-54, 56-57, 59-60, 62-64 above, and further in view of Bailey et al (5885340).

Westman et al in and Carlson do not disclose using a cationic alkyl ketene dimer.

Bailey et al discloses a paper sized with an alkyl ketene dimer wherein the alkyl group has 8-20 carbon atoms (col 3, lines 15-28), a starch adhesive (col 3, lines 35-41) and an acrylic acid (col 4, lines 19-27). Bailey et al teaches that cationic alkyl ketene dimer is a commercially available product, AQUAPEL[®] C519, from Hercules Corporation (col 6, lines 55-57).

The art of Westman et al, Carlson, Bailey et al and the instant invention are analogous as pertaining to sizing compositions. One of ordinary skill in the art would have been aware of available alkyl ketene dimers and it would have been obvious at the time of the invention to use a commercially available cationic alkyl ketene dimer in the composition of Westman et al in view of Carlson and further in view of Bailey et al as well known and functionally equivalent option.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DRC

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Eric Hug
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PRIMARY EXAMINER